Corporate Profitability and Stock Price Nexus: A Study of Nigeria Deposit Money Bank (NDMB) Stock Performance

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Abstract: This paper studies the relationship between the profitability of Nigeria deposit money banks (NDMB) and their stock price behavior, noting in particular the disparity between banks' profit and stock price. We link Banks share price to the size of total asset, return on average asset *(roaa)* and return on average equity (roae). Net interest margin *(NIM)* and age of bank *(Agb)* were the other included explanatory variables. Because the study involves a subsector of the economy, we use the methodology of panel data econometric analysis that enables the inclusion of cross-sectional data of eight (8) Nigeria deposit money banks over a period of 11 years. Though our findings show a strong positive relationship between bank total assets, average return on asset and stock price, we see this relationship as spurious. Nigeria deposit money banks' profits have other explanations not related to true banking activities. First these banks have more of short-term liabilities on their balance sheet, which portends more risk and thus explains their lower price earnings (P/E) ratio that is below the lower 5% threshold. These banks though, make good profits, such profits are not based on strong long term balance sheets activities. Our conclusion is that, these none balance sheet-based profits obtrude banks' performance from the purview of the capital market participants. They are not anticipated by day traders. These distortions do not allow bank profits to ignite market expectations, which naturally should snowball into market sentiments and eventually enable bank stock rally which should have close the relation between bank stock price and profit. This is the case in sectors as building materials, food and beverages etc. where stock price is empirically relative to profitability.

Keywords: Share Price, Deposit Money Bank, Total Asset, Share Price Return on Average Asset.

Introduction

This paper investigates the seemingly inverse relationship between Nigeria deposit money bank (DMB) stock price market behaviour, and the acclaimed success of the financial subsector in the Nigeria economy. There is this general notion amongst industry watchers, that the banking industry is the most successful in the financial subsector of the Nigeria economy. "Based on the data, financial institutions retained their position as the fastest-growing sub-sector in the Nigerian economy. Growth in the sector remains miles ahead of every other sector in the economy and is higher than the overall GDP growth rate of 1.87% for the quarter" (Nairametrics 2020, 6 May). But this claim appears not reflected in the performance of the banking subsector stock price on the Nigeria All Share Index (ASI).

In 2017, Zenith Bank Plc. a leading tier one deposit money bank, recorded a profit before tax (PBT) of ₦203 billion an increase of 30.12% over the previous ₦156 billion recorded in 2016. In the same period, the stock price decreased from ₦25.45 in 2017 to ₦23.3 in 2018, a decrease of some 8.44 percent. Guaranty Trust Bank (G. T Bank) another first tier deposit money bank declared: "its PBT rose from ₦85.69 billion in 2016, to ₦101.1 billion an increase of 17.98% or approximately 18 percent in 2017. Yet its stock price fell from ₦40.75 in 2017 to ₦34.45, representing a decrease of 15.46 percent. Nowhere in the financial sector, in particular the banking subsector, is profit replicated in stock price. Yet the Nigerian deposit money banks (DMB) continue to maximize profitability despite the financial crisis stemming from the 2008-2009 global meltdown of the 2020 global pandemic. The paradox is that while banks' profits are on the rise, the share price of these banks are not growing proportionally to justify their impressive profit performance. In 2020, the top first tier banks: Zenith, Guaranty trust bank, Access, First Bank of Nigeria and United Bank for Africa (UBA) delivered operating income of ₦1.5 trillion whereas their share prices ranged between N3.00 to N10.00. Compare this with sectors as building materials, where Dangote Cement share price currently stands at ₦352 from ₦261 in 2022 an increase of 34.86 percent which is in consonant with its profit in 2021.

Generally, financial theories posit that; stock valuation should always reflect the current health of the underlying business and its future growth potentials. Specifically financial theory such as the "efficient markets hypothesis" developed by Eugene Fama (1970) is of the opinion that, stock prices do incorporate all available information and hence there are no profitable arbitrage opportunities. Fama tried to demonstrate that at any moment in time, "the next movement of a stock price is just as likely to be up as down" in other words, stock prices follow a "random walk." Much as the arguments of these theories remind valid and undoubtfully resilient over the decades, Nigeria banking stock prices appears neither following the "random work" pattern of Fama, nor reflect the current health of the underlying business and its future growth potentials. Even when a bank or group of banks report(s) junky year end profits, this appears not to reflect in the capital market stock price of these banks.

Share prices of even tier 1 Nigeria banks in the last two or more decades or so to date, have remained ridiculously low for a sector believed to be performing optimally good. Data from the Nigeria Capital Market show an average bank stock price of N25.00 over the last decade or more. Thus, the fundamental issues slated for resolution in this work is the questions: - What could possibly explain the low stock price for a subsector acclaim for its top-notch performance? Which variable(s) drive bank stock prices in the capital market that are so uncorrelated with actual banking industry performance profit wise? Which variables could correctly measure the Ban king sector profit performance relative to its stock price?

The essence of this paper is to empirically determine the impact of share price on deposit money banks' profitability in Nigeria while controlling for firm size, age and management quality. We investigate these issues and also examine the seemingly inverse banking sector stock price behaviour relative to the acclaimed performance of the sector, using market and corporate data. For purposes of clarity and ease of readability, the rest of this work proceed as follows: sub-section one and two clarify the concept of profit and does a general discourse of stock price performance; section two reviews extant literature and provides the motivation for this work, also opening the gap in the literature necessitating this work. Section three discusses the methodology adopted, while section four presents applicable data and analysis our findings. We conclude the paper in section five.

Key Concept Clarification – *Corporate Profitability*

Profit is variously conceptualized depending on the perception and background of the particular author. More generally, it is defined as the difference between revenue and costs, where costs could include both tangibles and intangibles cost items. In the banking industry, intangible costs could include wide ranging variables as interest charges, information technology (IT) downtime due to its crucial role in banking service offerings, poor customer care, bank staff truancy etc. These intangible costs could sufficiently decimate a bank's targeted profit. As it were, businesses are known to calculate the appearance of profit rather than the economic reality of it actually occurring. Most enterprises use money to purchases and sales, so for purposes of accounting, the "appearance of profit" is easy to understand**.**

More generally, profitability is the efficiency of a company or industry at generating profit (Simkovic 2009). It is also the amount of profit that a company produces during a specific period. Ultimately, it is revenue minus cost of sales, operating expenses, and taxes over a given period of time. Return of assets (ROA) ranks as one of most extensively used variables as determining banks' profitability (Wang, 2005). Return on Equity (ROE) measures the return earned on funds contributed by a company's ordinary shareholders, since ordinary shareholders of a company are the owners who bear the greatest degree of risks with regards to the capital they have contributed (Bhayani, 2012). Return on Equity is viewed as one of the most important financial ratios to measure the ultimate profitability of their investment.

Theories of profit abound following the different perceptions of the concept. Joseph Schumpeter (the German Economist) traced corporate profit to innovations. He believed an entrepreneur can earn economic profits only by successfully creating new products or services offerings – following Schumpeter, profit is the reward for innovations. What maximizes the "overall profits" of a firm is not necessarily what allows it to attain the maximum "profitability". Innovation is crucial to corporate profit. It creates new markets or add value to an existing product or service, thus expands the revenue earning base for corporate organizations. In this definition, Schumpeter emphasis "economic profit" as against "accounting profit." Generally, the Nigeria banking industry is relatively slow in product or services innovations, but an insignificant few have in recent years though, successfully entered new markets. Certainly, innovation is not a significant source of revenue in the Nigeria banking industry.

Frank H. Knight (1885 – 1972) an American Economist saw profit as "residual return or income", earn due to uncertainly and not for reason of risk bearing. He distinguished between "calculable" and "non-calculable risks." Calculable risks are those, the prodigality of occurrence could be calculated on basis of available data. Example includes risk due to fire, theft or accidents etc. these are calculable risks and such risks are insurable. Incalculable risks are those the probability of their occurrence cannot be calculated - certain elements of cost cannot be accurately calculated and the strategies of the competitors may not be precisely assessable. But incalculable risk of includable costs are also insurable so they pose no real risk.

It is in the area of uncertainly which makes decision-making a central management function capable of earning profit for an entrepreneur. If his decisions prove to be right, the entrepreneur makes profit. Thus, knight sees profit as arising from the decisions made and implemented under conditions of uncertainly. Profit may accrue as a result of decision made in relation to the state of the market that increase the degree of monopoly, decisions regarding holding of stocks that give rise to windfall gains and the decisions made to introduce new techniques, technology and innovations. The decision as to the new expansion part in the industry that turns out to be right.

Though Nigeria deposit money banks operate under conditions of uncertainty, we are not sure these banks convert uncertainty to profitability in decision making. Besides, banks generally are bonded by corporate and stringent State laws that only allow for acceptable calculable risks in decision making. Therefore, only an insignificant percentage of Nigeria banks profit is traceable to good investment decision made under condition of uncertainty. Nigeria banks earns no abnormal profit due in part to the uniformity in marketing style, product and service offerings and market environment that allow for little or no competitions in the banking market place.

Corporate profit is variously described – Net profit (NET), operating profit (OP) or earnings before interest and tax (EBIT), return on asset (ROA), return on equity (ROE) etc. Nigerian corporate organizations including Deposit Money Banks, rely heavily on net income (NET) or profit after tax (PAT), with its many short comings, as the hallmark measurement criterion for corporate profit. Thus, income statement of Nigeria corporate firms often terminates at net income leaving out cost of equity, an important cost component in economic cost analysis and profit. We investigate these to determine the real merit of the acclaimed Nigeria deposit money bank super profit claim. We believe this could explain the inverse relationship between actual performance of Nigeria deposit money banks (DMB) and their stock price behaviour.

Stock Price Performance – *Nigeria Deposit Money Bank*

A share price is the price of a unit of share of a number of saleable stocks of a company, derivative, or other financial assets, that is the highest amount an investor is willing to pay for the stock, or the lower amount that it can be bought for (Lo & Mackinlay,1988), (Chen, Firth and Krishman, 2011). Generally, variables measuring stock price performance in the capital market are numerous and far flaunt as there are industry. Almumani (2014) pointed out, different researchers have found different important fundamentals factors viz.: dividend, retained earnings, size, earning per share, dividend yield, leverage, payout ratio, book value per share as determinants of stock price in different capital markets.

Baden (2014) on the other hand sees stock price movement as a fall out from market sentiments, growth expectations, valuations, central bank activity and momentum. On a day-to-day basis, it is impossible to predict what will happen in the stock markets worldwide. One week, the market is up on better-than-expected economic indicators, and the next it's down because of a new development in the sovereign debt crisis in Europe. "It's so unpredictable,"(Roger Aliaga-Díaz) https://vanguardinstitutionalblog.com/author/roger-aliaga-di   But bank stock price performance appears to leverage on a different set of metrics.

Following Rawlin and Shanmugam (2018), bank stock prices are influenced by fundamentals including but not limited to – bank profitability, bank specific risks, and macroeconomic factors such as net asset value, operating and cost efficiency and earning announcements. Following Eugene Fama (ibid), earning announcement is not necessary a driver of stock price since all relevant current market information have been factored into current share price. Inyiama (2015) used dedicated metrics - Bank age, earnings per share (EPS) and return on assets (ROA) as determinants of the movement in Nigeria bank stock prices. How these metrics, with their many shortcomings in relation to profit measurement could address movements in bank stock price in Nigeria deposit money banks remain to be examined.

We conclude this discussion by reiterating that determining share prices is a complex and conflicting task. Economic theory says the price of any asset, financial or otherwise, is usually a function of market forces (supply and demand). But empirical studies conducted on determinants of stock prices, in particular those of banks offer a different set of explanation. For example, a number of these studies cites the relationships between stock prices factors that could impact on it (e.g., firm earnings, bank specific risk, momentum, dividends and book-value per share etc. (Rawlins and Shanmugam 2018, Osuagwu, E.S 2014, Almumani 2014).

Literature Review

Literature in the area of corporate profitability, stock price behaviour and determinants are quiet vast beginning from earlier scholarly works such as that by Eugene Fama (1970). Rajagopalachari et al. (2011) refers to net income as a general traditional common metric that measures corporate performance, but suddenly trashed it, saying it does however, has the shortcomings of not measuring how effectively a bank functions in relation to its size and does not truly reflect its asset efficiency. Banks' assets are basically performing consumer credits facilities. Its efficacy would reflect increased net interest margin (NIM) percentage in the profitability of a bank.

Rajagopalachari et al *(ibid)* appear to have erred in their critique of net income. Though net income portends not a reliable measure of corporate profit performance, its weakness lies not in its inability to measure banks asset efficacy in relation to the size of a bank. It rather derives from the fact that net income is entirely an accounting measure and thus exclude important economic cost components – cost of equity capital (i.e., the required rate of return by investors), shareholder value created, market value added (MVA) and economic value added (EVA) all of which are important components of stock price valuation. Any valuation arising from such fault prone metric could be distortionary in explaining the concept of profit.

Chen; Da and Zhao (2013) raised the question; "whether stock prices move because of revisions in expected cash flows or discount rates…" They further argued, "stock returns have a significant cash flow news component whose importance increases with the investment horizon." "For longer horizons over two years and more, cash flow news is more important." These conclusions hold at both the firm and industry aggregate levels." Chen et al (ibid)) concluded, "Our findings highlight the importance of cash flows in asset pricing."

Almumani (2014) did an empirical study to identify the quantitative factors that influence share prices for listed banks on Amman Stock Exchange over the period 2005-2011. Empirical findings from this study showed a positive correlation between accounting ratios such as divided per share (DPS), earnings per share (EPS) and price earnings ratio (PE) and the dependent variable market price of shares (MP). Almumani's findings from this study contributed very little to the existing body of knowledge in Corporate Finance. All explanatory (EPS, DPS, PE) metrics used by the author are over flocked and found to be less useful in explaining determinants of share price behaviour. His choice of methodology – the linear regression econometrics is no less damaging as it obfuscates much of the weaknesses in the accounting ratios used. Additionally, it is over simplifying the problem.

Hughes and Mester (2013), measured bank performance in North America. A bank's risk-taking is also influenced by external and internal mechanisms that discipline bank managers. Internal discipline might be induced or reduced by organizational form, ownership and capital structure, governing boards, and managerial compensation. External discipline might be induced or reduced by government regulations and the safety net, capital market discipline (takeovers, mergers and acquisitions, cost of funds, stakeholders' ability to sell stock), managerial labor market competition, outside block holders of equity and debt, and product market competition. These operating environments can also create agency conflicts that influence managers' incentives to pursue value-maximizing risk strategies. Managers whose wealth consists largely of their undiversified human capital tend to avoid riskier investment strategies that maximize the value of banks with poorer investment opportunities. However, the presence of a diversified outside owner of a large block of stock might encourage the board to put in place a compensation plan that overcomes managers' risk aversion and encourages value-maximizing risk-taking.

Shih, Qi Zhang, and Liu (2007), used principal component analysis to measure a bank's performance based on its ability to perform the core task of financial intermediation, example credit risk transformation. The study then segmented the Chinese banking subsector and compared their performance in relationship to the core intermediation functions. They found China's State banks, joint-stock banks, and city commercial banks performed better along these measures. In terms of overall performance and in credit risk management, joint-stock banks performed significantly better than both the State banks and the city commercial banks. Shih et al. *(ibid)*, further found that unlike other developing countries, bank size in China has no correlation with performance. Mid-sized national joint-stock banks performed considerably better compared to the Big Four banks and smaller city commercial banks (CCBs).

Irresberger, Mühlnickel & Weiß (2015) did an empirical study of bank stock performance using search volume data on crisis-related queries from Google Trends. They estimated three different measures of market-level and individual crisis sentiment. Their findings concluded that stock performance of international banks during the period Q1 2004 to Q4 2012 was significantly driven by investors' irrational market-wide crisis sentiment. "Our empirical analysis shows that irrational market-wide crisis sentiment leads investors to devalue bank stocks irrespective of idiosyncratic or macroeconomic fundamentals." This implies that bank stock prices are sometime driving not by economic fundamentals but irrational sentiment.

Bouwman et al. (2018, revised 2020), examined the relationship between bank capital and the bank stock returns. "Despite its importance, we do not know how much bank capital affects bank stock returns." They found that bank capital (represented by bank capital) does not affect returns unconditionally. High-capital banks have higher risk-adjusted stock returns (alphas) than low-capital banks in bad times. Bouwman et al. argued otherwise, "that the effect is negative and that higher capital leads to diminished shareholder value in banking, this finding obliterates this argument.

Heffernan; Shelagh and Xiaoqing (2008) conducted an empirical study to determine fundamental variables impacting bank performance in China. A sample covering 76 banks (95% of total banking assets) between "the ability to influence a group towards the achievement of a vision or set goals 1999 and 2006 was collated for the study. The study concluded, based on empirical findings, the best dependent variables are economic value added

(EVA) and the net interest margin, as against ROAA or ROAE. Chinese Bank Reform indicators (bank listing and foreign equity participation) have no significant influence on bank performance. We strongly agree with the findings stipulating economic value added (EVA) and net interest margin (NIM) as best dependable variables for measuring bank share price performance. After all net interest margin (NIM) derives from banks' core business competencies.

Osuagwu (2014), "Determinants of bank profitability in Nigeria", concluded that bank profitability is largely determined by credit risk and other factors that relate to the internal organization of banking firms. According Osuagwu, "market concentration" and exchange rate are significant determinants of bank profitability in Nigeria. Osuagwu's exchange rate claim is doubtful arising from a spurious regression. Exchange rate mechanism is exceptionally dynamic and has change frequencies that makes its contribution to bank profitability irrelevant and even not measurable in banks income statements. Additionally, hardly Nigerian deposit money bank invest currency trading, thus profiting from exchange rate looks spurious.

The "market concentration" argument as a determinant of bank profit in the Nigeria banking industry appears not correct. Nigeria has fewer banks (currently less than forty) to an estimated population of two million. In so far this is the case, the market concentration argument remains doubtful. Besides, that the bank concentration ratio is plausible in Bourke's (1989) market environment as cited by Osuagwu, does not make it applicable in the Nigeria banking market environment of today. The work by Oyedokun et al. (2019) used simple multiple regression analysis concluded that "dividend payout ratio and price-earnings ratio have a significant positive relationship with the share price". And that dividend yield has a significant negative association with share price."

Inyiama (2015) examined the effects of "banks financial performance" metrics which he identified as: "Bank age, earnings per share and return on assets on share prices" in the Nigerian banking industry. The study was structured to examine the extent to which changes in market price of shares in Nigeria banking sector is explained or influenced by earnings per share, return on assets and age of the bank age. Finding: Inyiama *(ibid)* found that, "market price of shares of the banking industry was found to be positively and significantly influenced by earnings per share." "Return on assets and bank age exerts positive influence on market price of ordinary shares." There is also a fairly strong *relationship between MPS and earnings per share."(emphasis mine)*. Inyiama concluded, "The implication of these findings is that *an increase in earnings could lead to a noticeable appreciation in the market price of shares in Nigeria banking industry."(emphasis mine).* This appears correct as earnings outlook could attract impulse purchase or even a bottom out purchase of a bank share.

Finally, Inyiama recommended, "to grow the share price, banks should apply critical cost reduction strategies, aggressive marketing, and diversification strategies to improve on its net earnings which by extension, could lead to enhanced dividend pay-out." Findings from Inyiama's work are, to say the least, robust as well interesting, so are his conclusions. Interestingly, his findings provoke the needed gap in the literature and premise upon which the current effort is built. We do not agree any tangible relationship exist between the accounting ratios so listed by Inyiama and market price of bank stocks in the Nigeria capital market. These ratios have been severally examined and found unreliable. For instance, Rappaport and Mauboussin (2001) stated; "those who depend on superficial measures such as earnings jeopardize their understanding of the essential drivers of shareholder value. "They questioned: "How can so many investors and managers continue to believe that short-term reported earnings rather long-term cash flows fuel stock prices?"

Summarizing the literature so far reviewed, we find that metrics determining bank share price movement vary across countries of the world. Markets and regional peculiarities, state and financial market regulations, macroeconomy and a whole host of other factors all account for the different factors driving bank stock price. This work is structured to answer the questions that were earlier raised – which variables explain or determine bank stock price in the Nigeria banking sector. Why the disparity between Nigeria bank stock price and bank performance in terms of profitability metrics – as return on equity, (ROE), return on assets (ROA) etc.?

Empirical Literature
Random Walk Theory

Random walk theory suggests that changes in asset prices are random. This means that stock prices move unpredictably, so that past prices cannot be used to accurately predict future prices. Random walk theory also implies that the stock market is efficient and reflects all available information. A random walk challenges the idea that traders can time the market or use technical analysis to identify and profit from patterns or trends in stock prices. Random walk has been criticized by some traders and analysts who believe that stock prices can be predicted using various methods, like technical analysis.

Separation Theorem/Liquidity Preference Theory

Tobin (1958) contributed to the expansion of the concepts introduced by Markowitz (1952). Using Keynesian Theory as a starting point, Tobin (1958) argued that investors choose situations that fall between a state of total liquidity and a point of total investment in high-risk assets. In his work, Tobin (1958) noted that investors prefer liquidity, due to two aspects: one concerns individual inelasticity towards the expected interest rate, and the other, uncertainty as to the future of interest rates. In other words, investors are inclined to avoid the risk of losing the wealth of their capital as a consequence of unpredictable asset price fluctuations (market risk). Additionally, Tobin (1958) developed the observation that investors make their decisions by combining a risk-free asset with the portfolio located at the Efficient Frontier introduced by Markowitz (1952), leading to the Separation Theorem, which states that the two investment decisions made by individuals are independent and separate.

The Dynamic Theory of Profit
This theory was propounded by Prof. J. B Clark in 1900. According to him, "Profit is the difference between the price and the cost of the production of the commodity". But Profit is the result of dynamic change. He further argued in his opinion that, there can be no real or pure profit as a surplus in a stationary state having static economic conditions of demand and supply. In a stationary economy, the quantum of capital invested, methods of production, managerial organizations, technology, demand pattern etc. remain constant. Under competitive conditions, price tends to equal average costs; hence, the surplus is zero. So, no pure profit but there may be some frictional profits emerging due to frictions in the system. But this cannot be regarded as real Profits. Profit is as a result of six dynamic changes i.e.;

- Changes or increase in population
- Changes in tastes and preferences
- Multiplication of wants
- Capital formation
- Technological advancement
- Changes in the form of business organization.

On account of these changes the economy tends to be dynamic. Demand and supply conditions are altered. Some entrepreneurs may get advantageous business positions against others and may reap surplus over costs, as a real profit. In short, those who takes advantage of changing situation can earn real profits according to their efficiency. Producers who fail to move with dynamic changes may not get any real profit and may even incur losses.

Methodology

This paper adopts the panel data econometric methodology to analysis the issues raised. We have this far argued whether any relationship exists between the accounting net income (profit) of a bank and the behaviour of its share price on the capital market (the Nigeria All Share Index ASI). We implore some

level of sophistication in the analysis by extending the scope to include some randomly selected ten (9) deposit money banks for a period twenty (11) years to achieve a panel data structure for the study. The panel data structure is applicable because the paper deals with a subset or group – banking sector in the financial and allied services industry. Generally, the panel data modelling uses a combination of times series and cross-sectional data models to produce the panel data equation structure:

Model for Time Series

$$Y_{t = \alpha + \beta X t + \varepsilon t} \text{.....................................} 1$$

Model for cross section

$$Y_{i = \alpha + \beta X i + \varepsilon i} \text{...................................} 2$$

Combining the time series and cross section equations we have the panel data model as inequation 3(3) below:

$$Y_{it} = \alpha + \beta X_{it} + \varepsilon_{it} \text{.........................} 3$$

Model Specification

Specifying a general relationship amongst these variables in the model we have the functional relationship variables expressed as follows:

Y= f (PROF, SIZE, AGE AND MGT QUALITY) 4

From which the regression model is expressed as follows:

$$SPR_{it} = f\ (\beta_o + \beta_1\ PROFIT_{it} + \beta_2\ SIZE_{it} + \beta_3\ AGE_{it} + \beta_4\ MGT\ QTY_{it}\ e_{it}\ ) \text{ -------------- } 5$$

Where**:**

SPR_{it} = yearly average share price

$PROF_{it}$ = Profitability return on assets

(profit after tax/total assets)

$SIZE_{it}$ = Natural logarithm of total assets

AGE_{it} = Logarithm of numbers of years since listing on the Nigerian Stock Exchange

β_o = Parameters to be estimated (this is the average amount of dependent variable increases by one unit, other explanatory variables held constant.

$\beta_1 - \beta_4$ = Partial derivatives or the gradient of the explanatory variables.

e_{it} = an error term assumed to satisfy the standard OLS assumption (stochastic error term)

i = Individual company / bank.

t = Time / Year

Earnings after tax is an accounting metric wildly applauded by the Nigeria banking industry\ watchers as an index of good performance. Firm Size is the capacity of the firm measured by the size of its total assets. The size of a firm cannot be overlooked in determining the value of the firm. Larger firms are posed to have maximized value than smaller firms. If the value of the firm is measured by performance, then the large volume of operation will translate into better performance than smaller firms. Management Quality is directed at individuals and focused on the CEO length of stay from the date of assumption in office. Management quality is an organizational concept which describes the organization's capacity to meet high quality objectives in its management functions. This leads to better customer satisfaction financial and other performance.

Data Construction

Data are mined from Nigeria Banks Annual Reports since 2012 through 2022 and structured for panel data analysis. The data reports: profit – proxy by return on average asset (ROAA) and return on average equity (ROAE) while size is measured by total asset. Age of a bank is proxy by date of its initial public offering (IPO) to date. Yearly average stock price (YSPR) – a market variable is also reported. We include also net interest margin (NIM). This represents income from bank transformation function a core financial function of a bank. We applied manipulation to bring the various data to the same unit using natural logarithms (ln) to avoid disparity.

Data Presentation, Analysis and Discussion of Findings

All the data in the study are from secondary sources and are time series tested for normality assumptions. All the variables were subject to unit root using the *EViews software*. Both total asset, and age of bank and stock price are transformed using natural logarithms (ln) that resulted in *LogTAST*, *logAGB and log YSPR*. All the other variables: net interest margin (nim), return on average asset (roas), average return on equity (aroe) are already in percentage and need not be transformed. We run the pooled regression model using the panel least square method.

Table 1: Pooled Panel Regression Model

Dependent Variable: LNYSPR
Method: Panel Least Squares
Date: 06/20/23   Time: 20:01
Sample: 2012 2022
Periods included: 11
Cross-sections included: 8
Total panel (balanced) observations: 88

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-6.617639	1.457253	-4.541173	0.0000
LNTAST	0.724793	0.113301	6.397054	0.0000
LNAGB	-0.959853	0.167753	-5.721839	0.0000
NIM	20.15741	4.854253	4.152526	0.0001
ROAA	-8.402711	2.941843	-2.856275	0.0054
ROAE	1.081043	0.483311	2.236744	0.0280

R-squared	0.546686	Mean dependent var	2.113273
Adjusted R-squared	0.519044	S.D. dependent var	0.999353
S.E. of regression	0.693061	Akaike info criterion	2.170349
Sum squared resid	39.38737	Schwarz criterion	2.339258
Log likelihood	-89.49536	Hannan-Quinn criter.	2.238398
F-statistic	19.77798	Durbin-Watson stat	0.276891
Prob(F-statistic)	0.000000		

Source: *Eviews output following authors' computation*

The underlying assumption of the POLS model is that all the banks include in the panel are more or less the same in terms of intercepts and coefficients for all the cross sections (the 8 included banks). See equation 3 above.

The outcome of the panel ordinary least square pooled regression model of the variables is presented in table 1. Ln*AGB* and *ROAE* are negative but significant. *NIM* and *LnTAST* are positive and significant, indicating that *total asset* (TAST) and net interest margin *(NIM)* are positively related to stock price. The R-square (the goodness of fit) is good as it is over fifty percent (54.67%). The F- statistics which shows the overall significance shows it been statistically significant. Following this finding, we run the panel fixed effect model to enable determine which of the models: the pooled or fixed effect models provides a better fit.

Table 2: Panel Least Square: the fixed effect model

Dependent Variable: LNYSPR
Method: Panel Least Squares
Date: 06/20/23   Time: 20:07
Sample: 2012 2022
Periods included: 11
Cross-sections included: 8
Total panel (balanced) observations: 88

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.794553	1.368103	-2.042649	0.0446
LNTAST	0.166951	0.127949	1.304826	0.1959
LNAGB	0.595739	0.319190	1.866405	0.0659
NIM	7.930680	3.871273	2.048598	0.0440
ROAA	0.690279	4.533835	0.152251	0.8794
ROAE	0.129631	0.246788	0.525273	0.6009

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.925935	Mean dependent var	2.113273
Adjusted R-squared	0.914085	S.D. dependent var	0.999353
S.E. of regression	0.292923	Akaike info criterion	0.517791
Sum squared resid	6.435285	Schwarz criterion	0.883761
Log likelihood	-9.782798	Hannan-Quinn criter.	0.665231
F-statistic	78.13586	Durbin-Watson stat	1.562514
Prob (F-statistic)	0.000000		

Source: *Eviews output following authors' computation*

The fixed effect model appears not to provide a better fit as almost, if not all the variables, except net interest margin (NIM), are not statistically significant. As it in the pooled OLS, NIM is statistically significant implying that there is a significant relationship between NIM and stock price. The F- statistics though, overall goodness of fit, is statistically significant.

Finally, we run the Panel Redundant fixed effect likelihood ratio test to enable us determine which: the POLS or the fixed effect models best explain the relationship between the dependent and independent variables.

Table 3: Panel Redundant fixed effect likelihood ratio test

Redundant Fixed Effects Tests
Equation: Untitled
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	54.862854	(7,75)	0.0000
Cross-section Chi-square	159.425128	7	0.0000

Cross-section fixed effects test equation:
Dependent Variable: LNYSPR
Method: Panel Least Squares
Date: 06/21/23   Time: 08:22
Sample: 2012 2022
Periods included: 11
Cross-sections included: 8
Total panel (balanced) observations: 88

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-6.617639	1.457253	-4.541173	0.0000
LNTAST	0.724793	0.113301	6.397054	0.0000
LNAGB	-0.959853	0.167753	-5.721839	0.0000
NIM	20.15741	4.854253	4.152526	0.0001
ROAA	-8.402711	2.941843	-2.856275	0.0054
ROAE	1.081043	0.483311	2.236744	0.0280

R-squared	0.546686	Mean dependent var	2.113273
Adjusted R-squared	0.519044	S.D. dependent var	0.999353
S.E. of regression	0.693061	Akaike info criterion	2.170349
Sum squared resid	39.38737	Schwarz criterion	2.339258
Log likelihood	-89.49536	Hannan-Quinn criter.	2.238398
F-statistic	19.77798	Durbin-Watson stat	0.276891
Prob(F-statistic)	0.000000		

***Source:** Eviews output following authors' computation*

The null hypothesis for the *redundant fixed effect test is that: the* Pool OLS is better while; the *alternative* is that the fixed effect model is better. Though the cross-section *F. statistics* is statistically significant indicating a *rejection of the null hypothesis* and of the acceptance of the alternative, we are unable to do so as this appears implausible. Earlier result of the fixed model has most of the variables statistically insignificant except for net interest margin (NIM) – see table 2 above. We explain our findings based on the panel POLS as in table 1 above.

Discussion of Findings

Given the result of the panel least square (POLS) model obtained in table 1, we infer from it a number of issues: stock price has a strong relationship with total asset (TAST) in the banking sector; so is net interest margin (NIM) and average return on equity *(ROAE)*. Return on average asset *(ROAA)* and age of bank *(LnAGB)* are largely insignificant and have a negative relation in the behaviour of banking sector stock price. Real life situation supports our findings. It is true that an impressive size of a bank measured in its asset size, could positively influence its stock price, given that it generates "investors' confidence" that such banks could amass lots of capital gains down the years ahead. Day traders of bank stocks could also rely on this as the basis of their pricing a bank stock. But this has not being the case in the Nigeria banking industry. For instance, Union Bank Plc. (formerly Barclay Bank), that debunks its maiden Nigerian initial public offering (IPO) in 1979 through the 40% of the bank stock sold to Nigerians and businesses in compliance with the Indigenization Decree of 1972, and the banking and investment law. Before its leverage buyout (LBO), Union Bank stock price was about 50 kobo, far less than the ₦10 it sold per share at its maiden IPO in 1979. This notwithstanding its age and enormous asset size. As at the time of writing this paper, union bank stock price is as low as ₦7.5 per share.

Nigerian banking sector profit does not appear to be related to core banking businesses activities as investment banking, commodity trading, reinsurance etc. but unconventional and unrelated banking sector short investment such as high-risk profile short term financing of crude oil and gas and other trading activities. These are not conventional banking sector financing activities. They are thus not in the purview of day traders or buy-and-hold investors to anticipate growth of the banking firms which could ignite a stock price rally. Thus, the quality of bank management is important to the profitability of bank, but not stock price. Nigeria banks' management emphasizes short and not long-term investments to impressive shareholder to the detriment of long-term growth and share price of the firm. These are not reflective of strong long term balance sheet investments activities, but only boost short term profits which does not support stock price.

Nigeria deposit money banks (NDMB) need to strengthen their balance sheets activities, placing more emphasis on long term investments and deposits which will serve to improve their share price on the capital market. Our findings also show that private capital led banks like Zenith Bank and Guaranty Trust Bank (G.T Bank) with entrepreneurial capacity, have leapfrogged previously government owned banks like United Bank for Africa, Union Bank and First Bank.

Conclusively, it does appear that Nigeria deposit money (NDMB) profit is hardly ever related to genuine conventional banking activities resulting from a strong and long-term balance sheet activates that are known to capital market participants. This could be one possible explanation for the large disparity between bank stock price and profitability in the Nigeria banking subsector. The other economic sectors such as building materials and even food and beverages have profits that are empirically related to their stock price.

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